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# EXPERIMENT NO.8

import numpy as np import matplotlib.pyplot as plt

# Define the size of the grid (in terms of number of cells) grid\_size = 7

# Define the number of frequencies available num\_frequencies = 4

# Define the locations of mobile devices in the grid device\_locations = [(2, 2), (2, 4), (4, 2), (4, 4)]

# Initialize the grid with random frequencies assigned to each cell grid = np.zeros((grid\_size, grid\_size), dtype=int) for i in range(grid\_size): for j in range(grid\_size):

grid[i][j] = (i + j) % num\_frequencies

# Assign frequencies to mobile devices based on their locations device\_frequencies = [] for location in device\_locations:

device\_frequencies.append(grid[location[0]][location[1]])

# Plot the grid and mobile devices plt.imshow(grid, cmap=plt.cm.get\_cmap('Set1', num\_frequencies))

plt.colorbar(ticks=range(num\_frequencies)) for i, location in enumerate(device\_locations):

plt.text(location[1], location[0], f"Device {i+1}\nFreq:

{device\_frequencies[i]}", ha="center", va="center", color="white") plt.title('Cellular Frequency Reuse in Mobile Computing') plt.show()

# OUTPUT-

